IN THE CLAIMS:

Cancel claims 1-28

[Please add the following new claims 29-38]

29. *(new)* A process for evaluating an aging property of a distributed Bragg reflector (DBR) laser, the DBR laser comprising a laser cavity bounded on a first end by a reflective surface and a tunable reflector portion located adjacent to a second, opposing end of the laser cavity, said tunable reflector portion including a Bragg grating that functions as a distributed reflector, the tuning supplied by a tuning current applied across said tunable reflector, the process comprising the steps of:

a) determining an initial relationship between the laser output wavelength and tuning current as applied to the tunable reflector portion;

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b) placing the laser cavity in a non-lasing state;

c) illuminating the Bragg grating by an external light source;

d) providing a first tuning current to said tunable reflector portion and measuring a reflected spectrum and determining a Bragg peak wavelength for said tuning current;

e) repeating step d) for a plurality of tuning currents to determine a Bragg peak wavelength for each tuning current, defined as a pre-aging tuning current;

f) turning on and aging said laser cavity, then returning said laser cavity to the non-lasing state;

g) repeating step d) for the plurality of tuning currents to determine a post-aging Bragg peak wavelength for each tuning current;

h) determining, for each Bragg peak wavelength, a relationship between a pre-aging tuning current and a post-aging tuning current;

i) selecting a laser output wavelength;

j) finding a pre-aging tuning current for producing the selected output laser wavelength, using the relationship of step a); and

k) applying a post-aging tuning current to said tunable reflector portion associated with the pre-aging tuning current found in step j), the post-aging tuning current selected using the relationship of step h).

30. The process as defined in claim 29 wherein in performing steps b) and f), the laser is placed in a non-lasing state by reducing the reflectivity of the reflective surface disposed at the first end of the laser cavity.

31. The process as defined in claim 29 wherein in performing steps b) and f) the laser is placed in a non-lasing state by removing an input bias current from the laser cavity.

32. The process as defined in claim 29 wherein in performing step f) the laser is aged through conventional use.

33. The process as defined in claim 29 wherein in performing step f), an accelerated aging process is used.

34. The process as defined in claim 29 wherein the process is used to mark a DBR laser as disqualified using the following steps for a selected DBR laser:

l) defining a marking tuning current;

m) determining a pre-aging Bragg peak wavelength associated with said marking tuning current;

n) determining a post-aging Bragg peak wavelength associated with said marking tuning current; and

o) marking said DBR as disqualified for use if the post-aging Bragg peak wavelength has shifted more than a predetermined amount from the pre-aging Bragg peak wavelength.

35. The process as defined in claim 34 including the following step of:

p) qualifying the DBR laser as stable if the post-aging Bragg peak wavelength has not shifted more than a predetermined amount from the pre-aging Bragg peak wavelength.

36. *(new)* A system for evaluating an aging property of a distributed Bragg reflector (DBR) laser, the DBR laser comprising a laser cavity bounded on a first end by a reflective surface and a tunable reflector portion located adjacent to a second, opposing end of the laser cavity, said tunable reflector portion including a Bragg grating that functions as a distributed reflector, the tuning supplied by a tuning current applied across said tunable reflector, the system comprising:

a spectrum analyzer positioned to receive light reflected by the Bragg grating of the tunable reflector portion;

an adjustable current source for applying an adjustable tuning current to said tunable reflector portion; and

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a processor coupled to both the laser cavity and said tunable reflector portion for:

a) determining an initial relationship between the laser output wavelength and tuning current as applied to the tunable reflector portion;

b) placing the laser cavity in a non-lasing state;

c) illuminating the Bragg grating by an external light source;

d) providing a first tuning current to said tunable reflector portion and measuring a reflected spectrum and determining a Bragg peak wavelength for said tuning current;

e) repeating step d) for a plurality of tuning currents to determine a Bragg peak wavelength for each tuning current, defined as a pre-aging tuning current;

f) turning on and aging said laser cavity, then returning said laser cavity to the non-lasing state;

g) repeating step d) for the plurality of tuning currents to determine a post-aging Bragg peak wavelength for each tuning current;

h) determining, for each Bragg peak wavelength, a relationship between a pre-aging tuning current and a post-aging tuning current;

i) selecting a laser output wavelength;

j) finding a pre-aging tuning current for producing the selected output laser wavelength, using the relationship of step a); and

k) applying a post-aging tuning current to said tunable reflector portion associated with the pre-aging tuning current found in step j), the post-aging tuning current selected using the relationship of step h).

37. The system as defined in claim 36 wherein the processor is used to mark a DBR laser as disqualified using the following steps for a selected DBR laser:

l) defining a marking tuning current;

m) determining a pre-aging Bragg peak wavelength associated with said marking tuning current;

n) determining a post-aging Bragg peak wavelength associated with said marking tuning current; and

o) marking said DBR as disqualified for use if the post-aging Bragg peak wavelength has shifted more than a predetermined amount from the pre-aging Bragg peak wavelength.

38. The system as defined in claim 37 wherein the processor is used to qualify a DBR laser by using the step of comparing the post-aging Bragg peak wavelength to the pre-aging wavelength to determine if the post-aging Bragg peak wavelength has not shifted more than a predetermined amount from the pre-aging Bragg peak wavelength.